To: T10 Technical Committee
From: Rob Elliott, HP (elliott@hp.com)
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Subject: 06-196r0 SPC-4 Persistent Reservation REGISTER AND MOVE from unregistered I_T nexus

<u>**Revision history**</u>
Revision 0 (11 April 2006) First revision

<u>**Related documents**</u>
spc4r04 - SCSI Primary Commands - 4 revision 04
06-195 - SPC-4 Persistent Reservation additional sense code changes (Rob Elliott, HP)

<u>**Overview**</u>
These two paragraphs after table 35 (page 75):

> After the registration request has been processed, the device server shall then allow other
> PERSISTENT RESERVE OUT commands from the registered I_T nexus to be processed. The device
> server shall retain the reservation key until the key is changed as described in this subclause or
> removed as described in 5.6.10.

> Any PERSISTENT RESERVE OUT command service action received from an unregistered I_T nexus,
> other than the REGISTER or the REGISTER AND IGNORE EXISTING KEY service action, shall be
> rejected with a RESERVATION CONFLICT status.

and this in 6.12.3 (page 183):

> Except as noted above [discussion of REGISTER and REGISTER AND IGNORE EXISTING KEY],
> when a PERSISTENT RESERVE OUT command specifies a RESERVATION KEY field other than the
> reservation key registered for the I_T nexus the device server shall return a RESERVATION CONFLICT
> status.

conflict with the first row in table 36 (page 76), which calls out a CHECK CONDITION rather than a
RESERVATION CONFLICT status:

> REGISTER AND MOVE received on an unregistered I_T nexus: If there is an existing persistent
> reservation, return RESERVATION CONFLICT status. If there is not an existing persistent reservation,
> return CHECK CONDITION status [ILLEGAL REQUEST/INVALID FIELD IN CDB].

The most logical result is RESERVATION CONFLICT, since none of the fields in the CDB or parameter list are
wrong and causing the problem. This agrees with the behavior of all the other service actions.

Suggested changes

5.6.7 Registering and moving the reservation

The PERSISTENT RESERVE OUT command REGISTER AND MOVE service action is used to register a specified I_T nexus (see table 36) and move the reservation to that I_T nexus.

Table 36 — Register behaviors for a REGISTER AND MOVE service action

Command I_T nexus status	Parameter list fields [a]			Results
	RESERVATION KEY	SERVICE ACTION RESERVATION KEY	SPEC_I_T	
received on an unregistered I_T nexus	ignore	ignore	ignore	~~If there is an existing persistent reservation, r~~Return RESERVATION CONFLICT status. [d] ~~If there is not an existing persistent reservation, return CHECK CONDITION status.~~ [b]
received on the registered I_T nexus of reservation holder	Not equal to I_T nexus reservation key	ignore	ignore	Return RESERVATION CONFLICT status.
	Equal to the I_T nexus reservation key	zero	ignore	Return CHECK CONDITON status. [b]
		non-zero [c]	zero	The I_T nexus on which PERSISTENT RESERVE OUT command was received shall remain registered. See this subclause for the registration and the move specifications.
			one	The I_T nexus on which PERSISTENT RESERVE OUT command was received shall be unregistered (see 5.6.10.3) upon completion of command processing. See this subclause for the registration and the move specifications.
received on a registered I_T nexus that is not the reservation holder	ignore	ignore	ignore	Return RESERVATION CONFLICT status.

[a] For requirements regarding the parameter list fields not shown in this table see 6.12.3.
[b] The sense key shall be set to ILLEGAL REQUEST, and the additional sense code shall be set to INVALID FIELD IN CDB. [06-195 changes this to INVALID FIELD IN PARAMETER LIST]
[c] The application client and backup application should use the same reservation key.
[d] Devices compliant with previous versions of this standard may return CHECK CONDITION status with the sense key set to ILLEGAL REQUEST and the additional sense code set to INVALID FIELD IN CDB.